

Berichte aus der Automatisierungstechnik

Robert Haber (ed.)

**Control and Monitoring Algorithms
in Process Automation Applications**

Extended Proceedings
of the Process Automation Workshop 2008
at the Cologne University of Applied Sciences

Shaker Verlag
Aachen 2012

Bibliographic information published by the Deutsche Nationalbibliothek

The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available in the Internet at <http://dnb.d-nb.de>.

Cover illustration: distillation column
in Laboratory of Thermal Process Engineering,
Cologne University of Applied Sciences

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Printed in Germany.

ISBN 978-3-8440-1588-1
ISSN 0945-4659

Shaker Verlag GmbH • P.O. BOX 101818 • D-52018 Aachen
Phone: 0049/2407/9596-0 • Telefax: 0049/2407/9596-9
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Control and Monitoring Algorithms in Process Automation Applications

(Extended Proceedings of the Process Automation Workshop 2008 at the Cologne University of Applied Sciences)

Edited by R. Haber

Shaker Verlag, Aachen (Germany) 2012, 311 pages

This volume contains research results of control engineering groups at the Cologne University of Applied Sciences and from some cooperating groups. The papers deal with advanced control methods and their applications.

The following control methods are presented:

- predictive control of single-input, single output and multivariable processes
- constrained predictive control
- state space predictive control
- PFC (Predictive Functional Control)
- new PID (Proportional, Integral, Derivative) controller tuning method based on inflectional tangent
- PID controller tuning based on PFC
- predictive PID control

The following control applications are described:

- coupled industrial furnace
- wastewater treatment
- heating system
- Claus unit

The following monitoring methods and applications are treated:

- asset management of pumps
- control performance monitoring of valves
- fault detection of gas analyzers using control charts